

17-21 September 2018,
Le Corum, Montpellier - France

Eucalyptus 2018



Managing
Eucalyptus plantations
under global changes



Abstracts Book

Eucalyptus Farmers’ Preferences for Water-Saving Strategies in Brazil

Gabriela Demarchi ^{*† 1}, Julie Subervie ², Jean-Paul Laclau ¹, Fernando Leite ³

¹ UMR EcoSols (Univ Montpellier, Cirad, Inra, IRD, Montpellier SupAgro) – CIRAD – 34060 Montpellier, France

² Institut national de la recherche agronomique (Inra) – Université de Montpellier – 34060 Montpellier, France

³ Celulose Nipo-Brasileira (CENIBRA) – CEP: 35196-000 - Belo Oriente – MG, Brazil

In a climate change context, changing temperature and precipitation pattern are expected to have strong impacts on Brazilian eucalyptus plantations. These impacts include a likely decrease in yields, an increase in tree mortality and in the frequency and intensity of forest fires, and an increase in the frequency of pest and disease attacks. Besides that, the behavior in the water consumption of eucalyptus plantations can have negative effects on the stream flows in the watersheds where they are located. Therefore, implementing adaptive water-efficient management practices is necessary to maintain high plantation productivity while preserving the water resources. This paper investigates the willingness of eucalyptus farmers to modify the current silvicultural practices in order to adapt to climate change. The valuation approach carried in this study is based on the choice experiment (CE) method, which explores the viability of implementing adaptive strategies based on producers’ predilections. We carried out a CE with 80 eucalyptus producers in the state of Minas Gerais, Brazil, where the farmers were asked to choose between hypothetical management scenarios with different silvicultural directives and various economic incentives. We moreover analyzed how the socioeconomic and farm characteristics may influence farmers’ preferences for adaptation. Our results suggest two important points regarding adaptation options that may be considered in the future. First, the adaptation is more likely to occur by reducing the length of the eucalyptus rotation, since the surveyed farmers value this strategy positively in the choice experiment, which suggests that such change could be done at no cost for them. Second, they are generally averse to reduce tree density, meaning that it would be costly to them to adopt this strategy and that some financial support would be required for this option to be implemented. When we analyze farmers’ preferences heterogeneity using a 2-segment latent class model, we moreover obtain a clear and relevant segmentation of farmers’ choice behavior. We detect that both groups are likely to adapt to the upcoming global changes, but not in the same way. In particular, our results show that adaptation through reducing the rotation length is preferred by the most vulnerable farmers of the sample.

^{*}Speaker

[†]Corresponding author: gabriela.demarchi@supagro.fr

Keywords: choice experiment, climate change, drought, water resources, adaptation